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PPG INDUSTRIES, INC.
Intellectual Property Department
One PPG Place
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EXAMINER

SELLERS, ROBERT E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1712

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,287

Applicant(s)

MISURA ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-37 is/are pending in the application.
- 4a) Of the above claim(s) 32-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/16/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 17-31, drawn to a process for imparting photochromism to an organic polymeric host material, classified in class 427, subclass 164.
- II. Claims 32-37, drawn to a product of a photochromic organic polymeric material, classified in class 428, subclass 413.

The inventions are independent or distinct each other because:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another materially different product or (2) that the product as claimed can be made by another materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a variety of different processes as defined in claim 20 wherein materially different transferring steps (a), (b) or (c) can be selected.

Restriction for examination purposes as indicated is proper because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification.

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3. This application contains claims directed to the following patentably distinct species:

a) The photochromic compound(s).

b) The kinetic enhancing additives.

c) The organic host materials.

d) The transferring with or without the carrier(s) of claims 18 and 30, wherein if its presence is elected, particular species is identified.

e) The transferring with or without the additive(s) of claim 22, wherein if its presence is selected, particular species is indicated.

The species are independent or distinct because the myriad combinations of kinetic enhancing additives and organic host material necessitates burdensome searches throughout classes 523 and 524.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 17-37 are generic.

A reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species (MPEP § 809.02(a)).

During a telephone conversation with Frank P. Mallak on February 21, 2006, a provisional election was made with traverse to prosecute the invention of Group I and the following species:

- a) Naphthopyran.
- b) Polycaprolactone diol and polyethylene glycol diglycidyl ether.
- c) Poly(urea-urethane).
- d) The presence of hydroxypropylcellulose.
- e) The presence of a hindered amine ultraviolet light absorber, a polyphenol antioxidant and a silica rheology control agent.

Claims 17-31 embrace the elected invention and species. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32-37 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23, 24 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The species are not properly denoted within the proper Markush language of "selected from the group consisting of." The word "or" in claims 23 and 24, line 3 should be replaced with "and" upon the insertion of the Markush language.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17-20, 22-27 and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Mueller Patent No. 3,707,347.

5. Mueller discloses the application of an organic colorant which “diffuses into the molecular structure of a decorable plastic material (col. 2, lines 46—52 and col. 5, lines 28-39)” such as a polycarbonate or polystyrene (col. 2, lines 53-55 and 57) comprising an oxazine dye (a suitable species of photochromic compound according to page 15, line 12 of the specification), a diglycidyl ether of bisphenol A as a carrier (col. 3, lines 45-71 and col. 6, Example 2) and the elected species of silica rheology control agent (col. 4, lines 48-50). The “residual material remaining above the plastic surface is removed, thus leaving a marking on the article which is entirely disposed beneath the surface (col. 5, lines 37-39) as required in claim 19.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-20 and 22-27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walters et al., Stewart et al. Patent No. 6,432,544 and Japanese Patent No. 60-107030 in view of Mueller.

6. Walters et al. espouses the application by spin or curtain coating (col. 18, lines 22-23) onto a polycarbonate or polyol(allyl carbonate) organic optical material (col. 17, lines 3-12) of a mixture prepared from an epoxy resin such as a diglycidyl ether of diethylene glycol (col. 4, lines 59-60 and 66-67), a polyacid curing agent, a photochromic compound such as naphthopyrans (col. 15 lines 33-36), a solvent (col. 14, line 54 to col. 15, line 12), a hindered amine light stabilizer, a polyphenolic antioxidant and a rheology control agent (col. 16, lines 47, 48 and 62).

7. Stewart et al. reports the application by spin or curtain coating (col. 17, lines 7-10 and col. 26, Example 12) onto a diethylene glycol bis(allyl carbonate) lens (col. 17, lines 39-48, CR-39[®] monomer) of a composition containing the elected species of a naphto[1,2-b]pyran photochromic compound (col. 23, Composition E and cols, 23-24, Example 1), a polyester polyol Composition A (col. 19, line 20 to col. 20, line 15), an aminoplast, N-vinylpyrrolidone solvent, a hindered amine ultraviolet light stabilizer. Other solvents and rheology control agents are suitable (col. 13, lines 41-55 and 63).

8. The Japanese patent sets forth the coating of a polycarbonate lens (CAPLUS abstract, penultimate IT) with a blend of a mercury dithizone compound (a suitable species of photochromic compound according to page 15, line 25 of the specification), a polyfunctional epoxy compound, butanol solvent and silica.

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9. The claimed transferring of the formulation into the organic polymeric host material of claim 17 and the removal of residual carrier from the surface of claim 19 are not recited. Mueller is described hereinabove. Walters et al. and Stewart et al. describe same spin coating technique utilized in Part E of the specification on page 36, lines 15-17. Based on the equivalent components of Walters et al. and Stewart et al. applied to the lens by the same procedure as exemplified within the specification, the prior art compositions inherently transfer into the polycarbonate or polyol(allyl carbonate).

10. Even if the inherency of the internal transfer is challenged, it would have been obvious to coat the lenses of Walters et al., Stewart et al. and the Japanese patent via the process of Mueller in order to diffuse the composition into the molecular structure of the polycarbonate to prevent its loss from the surface (col. 5, lines 28-32).

11. It would have been obvious to remove the residual material remaining above the plastic surface of the lens of Walters et al., Stewart et al. and the Japanese patent in order to provide a clean and visually clear lens.

Claims 17-20 and 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshita et al. Patent No. 6,057,039 in view of Walters et al.

12. Takeshita et al. is directed to the application by spinner (col. 9, Example 3) onto a lens such as diethylene glycol bis(allyl carbonate) (col. 1, lines 15-17) of a mixture derived from a polyfunctional epoxy compound such as particularly preferably the elected species of diethylene glycol diglycidyl ether (col. 6, lines 11-19), a photochromic compound, an ultraviolet absorber, an antioxidant and a hindered amine or hindered phenol light stabilizer (col. 6, lines 47-53).

13. The claimed photochromic compound is disclosed but not exemplified. Walters et al. is described hereinabove. It would have been obvious to incorporate the disclosed photochromic compound of Takeshita et al. such as the naphthopyran of Walters et al. in order to impart a photochromic effect to the lens (Walters et al., col. 15, lines 24-36 and 61-65).

14. The claimed transferring of the formulation into the organic polymeric host material of claim 17 and the removal of residual carrier from the surface of claim 19 are not recited. Mueller is described hereinabove. Takeshita et al. reports the same spin coating technique utilized in Part E of the specification on page 36, lines 15-17. Based on the equivalent components of Takeshita et al. applied to the lens by the same procedure as exemplified within the specification, the prior art compositions inherently transfer into the polycarbonate or polyol(allyl carbonate).

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15. Even if the inherency of the internal transfer is challenged, it would have been obvious to coat the lenses of Takeshita et al. via the process of Mueller in order to diffuse the composition into the molecular structure of the polycarbonate to prevent its loss from the surface (col. 5, lines 28-32).

16. It would have been obvious to remove the residual material remaining above the plastic surface of the lens of Takeshita et al. in order to provide a clean and visually clear lens.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walters et al., Mueller and Stewart et al., Japanese Patent No. 60-107030 and Takeshita et al.

17. The transferring of (a) a portion of the kinetic enhancing additive before a portion of the photochromic compound, or (b) a portion of the photochromic compound before a portion of the kinetic enhancing additive, or portions of both the kinetic enhancing additive and photochromic compound is not recited.

18. It would have been obvious to coat part of the compositions of Walters et al., Mueller, Stewart et al., the Japanese patent and Takeshita et al. followed by the application of the remainder of the composition by the procedure of Mueller in order to ensure the diffusion of at least a part of the composition into the lens while providing a coating on the surface with the remainder.

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rs 3/19/2006



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